

SEQUENCE LISTING

<110> Newell, Martha K.

<120> METHODS AND PRODUCTS RELATED TO
METABOLIC INTERACTIONS IN DISEASE

<130> V0139/7028/HK

<150> U.S. 60/082,250
<151> 1998-04-17

<150> U.S. 60/094,519
<151> 1998-07-29

<150> U.S. 60/101,580
<151> 1998-09-24

<160> 13

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 1491
<212> DNA
<213> Homo Sapiens

<400> 1

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gtaaacatca	ctggagggtc	ttctacgtga	gcaattggat	tgtcatcagc	cctgcctgtt	240
ttgcacctgg	gaagtgcct	ggtcttactt	gggtccaaat	tgttggctt	cactttgac	300
cctaagcata	tgaagccatg	ggccacacac	ggaggcaggg	aacatcacca	tccaagtgtc	360
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cttaaaaacc	tcttcagat	taagctgaac	attacaaga	tggctggcat	ccctctcctt	1380
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<210> 2
<211> 288
<212> PRT
<213> Homo Sapiens

<400> 2

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Ser Gly Val Ile His Val Thr Lys Glu Val Lys Glu Val Ala Thr Leu
35 40 45
Ser Cys Gly His Asn Val Ser Val Glu Glu Leu Ala Gln Thr Arg Ile
50 55 60
Tyr Trp Gln Lys Glu Lys Lys Met Val Leu Thr Met Met Ser Gly Asp
65 70 75 80
Met Asn Ile Trp Pro Glu Tyr Lys Asn Arg Thr Ile Phe Asp Ile Thr
85 90 95
Asn Asn Leu Ser Ile Val Ile Leu Ala Leu Arg Pro Ser Asp Glu Gly
100 105 110
Thr Tyr Glu Cys Val Val Leu Lys Tyr Glu Lys Asp Ala Phe Lys Arg
115 120 125
Glu His Leu Ala Glu Val Thr Leu Ser Val Lys Ala Asp Phe Pro Thr
130 135 140
Pro Ser Ile Ser Asp Phe Glu Ile Pro Thr Ser Asn Ile Arg Arg Ile
145 150 155 160
Ile Cys Ser Thr Ser Gly Gly Phe Pro Glu Pro His Leu Ser Trp Leu
165 170 175
Glu Asn Gly Glu Glu Leu Asn Ala Ile Asn Thr Thr Val Ser Gln Asp
180 185 190
Pro Glu Thr Glu Leu Tyr Ala Val Ser Ser Lys Leu Asp Phe Asn Met
195 200 205
Thr Thr Asn His Ser Phe Met Cys Leu Ile Lys Tyr Gly His Leu Arg
210 215 220
Val Asn Gln Thr Phe Asn Trp Asn Thr Thr Lys Gln Glu His Phe Pro
225 230 235 240
Asp Asn Leu Leu Pro Ser Trp Ala Ile Thr Leu Ile Ser Val Asn Gly
245 250 255
Ile Phe Val Ile Cys Cys Leu Thr Tyr Cys Phe Ala Pro Arg Cys Arg
260 265 270
Glu Arg Arg Arg Asn Glu Arg Leu Arg Arg Glu Ser Val Arg Pro Val
275 280 285

<210> 3

<211> 1424

<212> DNA

<213> Homo Sapiens

<400> 3

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ttcctgctct ctgggtgtgc tcctctgaag attcaagctt atttcaatga gactgcagac 180
ctgccatgcc aatttgcaaa ctctaaaaac caaaggcctga gtgagctagt agtattttgg 240
caggaccagg aaaacttggt tctgaatgag gtatacttag gcaaagagaa atttgacagt 300
360

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acaggaatga	ttcgcatcca	ccagatgaat	tctgaactgt	cagtgcgtc	taacttcagt	540
caacctgaaa	tagtaccaat	ttctaatata	acagaaaatg	tgtacataaa	tttgacctgc	600
tcatctatac	acggttaccc	agaacctaag	aagatgagtg	tttgctaaag	aaccaagaat	660
tcaactatcg	agtatgatgg	tattatgcag	aatatctcaag	ataatgtcac	agaactgtac	720
gacgtttcca	tcagttgtc	tgtttcattc	cctgatgtt	cgagcaatat	gaccatotc	780
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aactcttata	aatgtggAAC	caacacaatg	gagagggaaag	agagtgaaca	gaccaagaaa	1020
agagaaaaaa	tccatatacc	tgaaagatct	gatgaagccc	agcgtgttt	taaaagttcg	1080
aagacatctt	catgcgacaa	aagtgataca	tgttttaat	taaagagtaa	agcccataca	1140
agtattcatt	ttttctaccc	tttccttctg	aagttcctgg	gcaacctttt	tgatttctc	1200
cagaaggcaa	aaagacatta	ccatgagtaa	taagggggct	ccaggactcc	ctctaagtgg	1260
aatagccccc	ctgtaactcc	agctctgctc	cgtatgccaa	gaggagactt	taattcttct	1320
actgcttctt	ttcacttcag	agcacactta	tggcccaagc	ccagcttaat	ggctcatgac	1380
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<210> 4
 <211> 323
 <212> PRT
 <213> Homo Sapiens

<400> 4

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					20				25					30		
Pro	Cys	Gln	Phe	Ala	Asn	Ser	Gln	Asn	Gln	Ser	Leu	Ser	Glu	Leu	Val	
					35				40					45		
Val	Phe	Trp	Gln	Asp	Gln	Glu	Asn	Leu	Val	Leu	Asn	Glu	Val	Tyr	Leu	
					50				55					60		
Gly	Lys	Glu	Lys	Phe	Asp	Ser	Val	His	Ser	Lys	Tyr	Met	Gly	Arg	Thr	
					65				70					75		80
Ser	Phe	Asp	Ser	Asp	Ser	Trp	Thr	Leu	Arg	Leu	His	Asn	Leu	Gln	Ile	
					85				90					95		
Lys	Asp	Lys	Gly	Leu	Tyr	Gln	Cys	Ile	Ile	His	His	Lys	Lys	Pro	Thr	
					100				105					110		
Gly	Met	Ile	Arg	Ile	His	Gln	Met	Asn	Ser	Glu	Leu	Ser	Val	Leu	Ala	
					115				120					125		
Asn	Phe	Ser	Gln	Pro	Glu	Ile	Val	Pro	Ile	Ser	Asn	Ile	Thr	Glu	Asn	
					130				135					140		
Val	Tyr	Ile	Asn	Leu	Thr	Cys	Ser	Ser	Ile	His	Gly	Tyr	Pro	Glu	Pro	
					145				150					155		160
Lys	Lys	Met	Ser	Val	Leu	Leu	Arg	Thr	Lys	Asn	Ser	Thr	Ile	Glu	Tyr	
					165				170					175		
Asp	Gly	Ile	Met	Gln	Lys	Ser	Gln	Asp	Asn	Val	Thr	Glu	Leu	Tyr	Asp	
					180				185					190		
Val	Ser	Ile	Ser	Leu	Ser	Val	Ser	Phe	Pro	Asp	Val	Thr	Ser	Asn	Met	
					195				200					205		
Thr	Ile	Phe	Cys	Ile	Leu	Glu	Thr	Asp	Lys	Thr	Arg	Leu	Leu	Ser	Ser	
					210				215					220		
Pro	Phe	Ser	Ile	Glu	Leu	Glu	Asp	Pro	Gln	Pro	Pro	Pro	Asp	His	Ile	
					225				230					235		240

Pro Trp Ile Thr Ala Val Leu Pro Thr Val Ile Ile Cys Val Met Val
 245 250 255
 Phe Cys Leu Ile Leu Trp Lys Trp Lys Lys Lys Arg Pro Arg Asn
 260 265 270
 Ser Tyr Lys Cys Gly Thr Asn Thr Met Glu Arg Glu Glu Ser Glu Gln
 275 280 285
 Thr Lys Lys Arg Glu Lys Ile His Ile Pro Glu Arg Ser Asp Glu Ala
 290 295 300
 Gln Arg Val Phe Lys Ser Ser Lys Thr Ser Ser Cys Asp Lys Ser Asp
 305 310 315 320
 Thr Cys Phe

<210> 5
 <211> 924
 <212> DNA
 <213> Homo Sapiens

<400> 5

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 ctccagggtcc aaggtaatg cccgacgtcc agtgttatta ggtataaagg tgcctggaa 180
 acaatcacccg ctgtggtaaa aacagaaggg cggatgaaac tctacagcgg gctgcctgcg 240
 gggcttcagc ggccaaatcag ctccgcctct ctcaggatcg gcctctacga cacggtccag 300
 gagttcctca ccgcagggaa agaaacagca cctagtttag gaagcaagat tttagctgg 360
 ctaacgactg gaggagtggc agtattcatt gggcaaccca cagaggtcgt gaaagtcaga 420
 cttcaaggcac agagccatct ccacggaaatc aaacctcgct acacggggac ttataatgcg 480
 tacagaataa tagcaacaac cgaaggcttg acgggtctt ggaaaggac tactccaaat 540
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 aacgaaggac caacggctt cttcaagggg ttggtacctt cttcttgcg acttggatcc 840
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<210> 6

<211> 307
 <212> PRT
 <213> Homo Sapiens

<400> 6

Met Gly Gly Leu Thr Ala Ser Asp Val His Pro Thr Leu Gly Val Gln
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 Leu Phe Ser Ala Gly Ile Ala Ala Cys Leu Ala Asp Val Ile Thr Phe
 20 25 30
 Pro Leu Asp Thr Ala Lys Val Arg Leu Gln Val Gln Gly Glu Cys Pro
 35 40 45
 Thr Ser Ser Val Ile Arg Tyr Lys Gly Val Leu Gly Thr Ile Thr Ala
 50 55 60
 Val Val Lys Thr Glu Gly Arg Met Lys Leu Tyr Ser Gly Leu Pro Ala
 65 70 75 80
 Gly Leu Gln Arg Gln Ile Ser Ser Ala Ser Leu Arg Ile Gly Leu Tyr
 85 90 95
 Asp Thr Val Gln Glu Phe Leu Thr Ala Gly Lys Glu Thr Ala Pro Ser

100	105	110													
Leu	Gly	Ser	Lys	Ile	Leu	Ala	Gly	Leu	Thr	Thr	Gly	Gly	Val	Ala	Val
115					120				125						
Phe	Ile	Gly	Gln	Pro	Thr	Glu	Val	Val	Lys	Val	Arg	Leu	Gln	Ala	Gln
130					135				140						
Ser	His	Leu	His	Gly	Ile	Lys	Pro	Arg	Tyr	Thr	Gly	Thr	Tyr	Asn	Ala
145					150				155					160	
Tyr	Arg	Ile	Ile	Ala	Thr	Thr	Glu	Gly	Leu	Thr	Gly	Leu	Trp	Lys	Gly
					165				170					175	
Thr	Thr	Pro	Asn	Leu	Met	Arg	Ser	Val	Ile	Ile	Asn	Cys	Thr	Glu	Leu
					180				185					190	
Val	Thr	Tyr	Asp	Leu	Met	Lys	Glu	Ala	Phe	Val	Lys	Asn	Asn	Ile	Leu
					195				200					205	
Ala	Asp	Asp	Val	Pro	Cys	His	Leu	Val	Ser	Ala	Leu	Ile	Ala	Gly	Phe
					210				215					220	
Cys	Ala	Thr	Ala	Met	Ser	Ser	Pro	Val	Asp	Val	Val	Lys	Thr	Arg	Phe
					225				230			235		240	
Ile	Asn	Ser	Pro	Pro	Gly	Gln	Tyr	Lys	Ser	Val	Pro	Asn	Cys	Ala	Met
					245				250					255	
Lys	Val	Phe	Thr	Asn	Glu	Gly	Pro	Thr	Ala	Phe	Phe	Lys	Gly	Leu	Val
					260				265					270	
Pro	Ser	Phe	Leu	Arg	Leu	Gly	Ser	Trp	Asn	Val	Ile	Met	Phe	Val	Cys
					275				280					285	
Phe	Glu	Gln	Leu	Lys	Arg	Glu	Leu	Ser	Lys	Ser	Arg	Gln	Thr	Met	Asp
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Cys	Ala	Thr													
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<210> 7
 <211> 1105
 <212> DNA
 <213> Homo Sapiens

<400> 7

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gcgcgcgtaca	gccagcgccc	agtaccgcgg	tgtgatgggc	accattctga	ccatggtgcg	300
tactgagggc	ccccgaagcc	tctacaatgg	gctgggtgcc	ggcctgcagc	gccaaatgag	360
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gttccggggc	ctctggaaag	ggacctctcc	caatgttgct	cgtaatgcca	ttgtcaactg	660
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<210> 8

<211> 309
<212> PRT
<213> Homo Sapiens

<400> 8

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Phe Leu Gly Ala Gly Thr Ala Ala Cys Ile Ala Asp Leu Ile Thr Phe
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Pro Leu Asp Thr Ala Lys Val Arg Leu Gln Ile Gln Gly Glu Ser Gln
35 40 45
Gly Pro Val Arg Ala Thr Ala Ser Ala Gln Tyr Arg Gly Val Met Gly
50 55 60
Thr Ile Leu Thr Met Val Arg Thr Glu Gly Pro Arg Ser Leu Tyr Asn
65 70 75 80
Gly Leu Val Ala Gly Leu Gln Arg Gln Met Ser Phe Ala Ser Val Arg
85 90 95
Ile Gly Leu Tyr Asp Ser Val Lys Gln Phe Tyr Thr Lys Gly Ser Glu
100 105 110
His Ala Ser Ile Gly Ser Arg Leu Leu Ala Gly Ser Thr Thr Gly Ala
115 120 125
Leu Ala Val Ala Val Ala Gln Pro Thr Asp Val Val Lys Val Arg Phe
130 135 140
Gln Ala Gln Ala Arg Ala Gly Gly Arg Arg Tyr Gln Ser Thr Val
145 150 155 160
Asn Ala Tyr Lys Thr Ile Ala Arg Glu Glu Gly Phe Arg Gly Leu Trp
165 170 175
Lys Gly Thr Ser Pro Asn Val Ala Arg Asn Ala Ile Val Asn Cys Ala
180 185 190
Glu Leu Val Thr Tyr Asp Leu Ile Lys Asp Ala Leu Leu Lys Ala Asn
195 200 205
Leu Met Thr Asp Asp Leu Pro Cys His Phe Thr Ser Ala Phe Gly Ala
210 215 220
Gly Phe Cys Thr Thr Val Ile Ala Ser Pro Val Asp Val Val Lys Thr
225 230 235 240
Arg Tyr Met Asn Ser Ala Leu Gly Gln Tyr Ser Ser Ala Gly His Cys
245 250 255
Ala Leu Thr Met Leu Gln Lys Glu Gly Pro Arg Ala Phe Tyr Lys Gly
260 265 270
Phe Met Pro Ser Phe Leu Arg Leu Gly Ser Trp Asn Val Val Met Phe
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290 295 300
Arg Glu Ala Pro Phe
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<210> 9
<211> 1132
<212> DNA
<213> Homo Sapiens

<400> 9

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gcgggtaccc	gtgcccagcc	cacagatgt	gtgaagggtcc	gatttcaggc	cagcatacac	600
ctcgggccat	ccaggagcga	cagaaaaatac	agcgggacta	tggacgccta	cagaaccatc	660
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ccagggccagt	acttcagccc	cctcgactgt	atgataaaaga	tggtgccca	ggagggcccc	960
acagccttct	acaaggggtg	agcctcctcc	tgcctccagc	actccctccc	agagaacagg	1020
ggcttcttc	ttttcaatg	tggctaccgt	gggtcaacct	gggatgttagc	ggtgaagagt	1080
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<210> 10
 <211> 275
 <212> PRT
 <213> Homo Sapiens

<400> 10																
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					20				25					30		
Pro	Leu	Asp	Thr	Ala	Lys	Val	Arg	Leu	Gln	Ile	Gln	Gly	Glu	Asn	Gln	
					35				40					45		
Ala	Val	Gln	Thr	Ala	Arg	Leu	Val	Gln	Tyr	Arg	Gly	Val	Leu	Gly	Thr	
					50				55					60		
Ile	Leu	Thr	Met	Val	Arg	Thr	Glu	Gly	Pro	Cys	Ser	Pro	Tyr	Asn	Gly	
					65				70					75		80
Leu	Val	Ala	Gly	Leu	Gln	Arg	Gln	Met	Ser	Phe	Ala	Ser	Ile	Arg	Ile	
					85				90					95		
Gly	Leu	Tyr	Asp	Ser	Val	Lys	Gln	Val	Tyr	Thr	Pro	Lys	Gly	Ala	Asp	
					100				105					110		
Asn	Ser	Ser	Leu	Thr	Thr	Arg	Ile	Leu	Ala	Gly	Cys	Thr	Thr	Gly	Ala	
					115				120					125		
Met	Ala	Val	Thr	Cys	Ala	Gln	Pro	Thr	Asp	Val	Val	Lys	Val	Arg	Phe	
					130				135					140		
Gln	Ala	Ser	Ile	His	Leu	Gly	Pro	Ser	Arg	Ser	Asp	Arg	Lys	Tyr	Ser	
					145				150					155		160
Gly	Thr	Met	Asp	Ala	Tyr	Arg	Thr	Ile	Ala	Arg	Glu	Glu	Gly	Val	Arg	
					165				170					175		
Gly	Leu	Trp	Lys	Gly	Thr	Leu	Pro	Asn	Ile	Met	Arg	Asn	Ala	Ile	Val	
					180				185					190		
Asn	Cys	Ala	Glu	Val	Val	Thr	Tyr	Asp	Ile	Leu	Lys	Glu	Lys	Leu	Leu	
					195				200					205		
Asp	Tyr	His	Leu	Leu	Thr	Asp	Asn	Phe	Pro	Cys	His	Phe	Val	Ser	Ala	
					210				215					220		
Phe	Gly	Ala	Gly	Phe	Cys	Ala	Thr	Val	Val	Ala	Ser	Pro	Val	Asp	Val	
					225				230					235		240
Val	Lys	Thr	Arg	Tyr	Met	Asn	Ser	Pro	Pro	Gly	Gln	Tyr	Phe	Ser	Pro	
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Leu Asp Cys Met Ile Lys Met Val Ala Gln Glu Gly Pro Thr Ala Phe
 260 265 270
 Tyr Lys Gly
 275

<210> 11
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<400> 12

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Asp	Asn	Ala	Val	Asn	Leu	Ser	Cys	Lys	Tyr	Ser	Tyr	Asn	Leu	Phe	Ser
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Arg	Glu	Phe	Arg	Ala	Ser	Leu	His	Lys	Gly	Leu	Asp	Ser	Ala	Val	Glu
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Val	Cys	Val	Val	Tyr	Gly	Asn	Tyr	Ser	Gln	Gln	Leu	Gln	Val	Tyr	Ser
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Lys	Thr	Gly	Phe	Asn	Cys	Asp	Gly	Lys	Leu	Gly	Asn	Glu	Ser	Val	Thr

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Lys Ile Glu Val Met Tyr Pro Pro Tyr Leu Asp Asn Glu Lys Ser
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Leu Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly
145 150 155 160
Gly Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile
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Phe Trp Val Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
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<212> PRT

<213> Homo Sapiens

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Arg His Arg Ser Gln Lys Gly Pro
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